
LIBRARY

```
LL             IIIIII    BBBBBBBB      CCCCCCCC  RRRRRRRR     CCCCCCCC  TTTTTTTTTT    AAAAAA    BBBBBBBB
LL             IIIIII    BBBBBBBB      CCCCCCCC  RRRRRRRR     CCCCCCCC  TTTTTTTTTT    AAAAAA    BBBBBBBB
LL               II      BB      BB  CC          RR      RR  CC            TT       AA      AA  BB      BB
LL               II      BB      BB  CC          RR      RR  CC            TT       AA      AA  BB      BB
LL               II      BB      BB  CC          RR      RR  CC            TT       AA      AA  BB      BB
LL               II      BB      BB  CC          RR      RR  CC            TT       AA      AA  BB      BB
LL               II      BBBBBBBB    CC          RRRRRRRR    CC            TT       AA      AA  BBBBBBBB
LL               II      BBBBBBBB    CC          RRRRRRRR    CC            TT       AA      AA  BBBBBBBB
LL               II      BB      BB  CC          RR   RR      CC            TT       AAAAAAAAAA  BB      BB
LL               II      BB      BB  CC          RR   RR      CC            TT       AAAAAAAAAA  BB      BB
LL               II      BB      BB  CC          RR    RR    CC            TT       AA      AA  BB      BB
LL               II      BB      BB  CC          RR    RR    CC            TT       AA      AA  BB      BB
LLLLLLLLLL     IIIIII    BBBBBBBB      CCCCCCCC  RR      RR    CCCCCCCC      TT       AA      AA  BBBBBBBB
LLLLLLLLLL     IIIIII    BBBBBBBB      CCCCCCCC  RR      RR    CCCCCCCC      TT       AA      AA  BBBBBBBB


LL             IIIIII      SSSSSSSS
LL             IIIIII      SSSSSSSS
LL               II      SS
LL               II      SS
LL               II      SS
LL               II      SS
LL               II        SSSSSS
LL               II        SSSSSS
LL               II              SS
LL               II              SS
LL               II              SS
LL               II              SS
LLLLLLLLLL     IIIIII    SSSSSSSS
LLLLLLLLLL     IIIIII    SSSSSSSS
```

```
;     1        0001  0 MODULE LIB$CRC_TABLE (%TITLE'Library CRC table genarator'
;     2        0002  0         IDENT = '1-003'  ! File: LIBCRCTAB.B32  Edit: SBL1003
;     3        0003  0         LINKAGE(FORTRAN)
;     4        0004  0                 ) =
;     5        0005  1 BEGIN
;     6        0006  1
;     7        0007  1 !
;     8        0008  1 !*****************************************************************************
;     9        0009  1 !*                                                                           *
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;    27        0027  1 !*                                                                           *
;    28        0028  1 !*                                                                           *
;    29        0029  1 !*****************************************************************************
;    30        0030  1 !
;    31        0031  1
;    32        0032  1 !++
;    33        0033  1 ! FACILITY:  General Utility Library
;    34        0034  1 !
;    35        0035  1 ! ABSTRACT:
;    36        0036  1 !
;    37        0037  1 !
;    38        0038  1 ! Given a polynomial, a table is constructed which can be
;    39        0039  1 ! used by the LIB$CRC module for generating the CRC value for an
;    40        0040  1 ! input stream.
;    41        0041  1 !
;    42        0042  1 ! ENVIRONMENT:  User Mode - AST re-entrant
;    43        0043  1 !
;    44        0044  1 ! AUTHOR:  Donald G. Petersen, CREATION DATE:  09-Jan-78
;    45        0045  1 !
;    46        0046  1 ! MODIFIED BY:
;    47        0047  1 !
;    48        0048  1 !       Donald G. Petersen, 09-Jan-78: VERSION 0
;    49        0049  1 ! 01    - original
;    50        0050  1 ! 0-02  - Change REQUIRE files for VAX system build.  DGP 28-Apr-78
;    51        0051  1 ! 0-03  - Change file name to LIBCRCTAB, and change the name of
;    52        0052  1 !         the require file similarly.  JBS 14-NOV-78
;    53        0053  1 ! 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
;    54        0054  1 ! 1-002 - Don't use arithmetic shift for right shift.  SBL 4-Dec-1979
;    55        0055  1 ! 1-003 - Use prologue file.  SBL 24-June-1983
;    56        0056  1 !--
```

```
;    58          0057  1 !
;    59          0058  1 ! PROLOGUE FILE:
;    60          0059  1 !
;    61          0060  1
;    62          0061  1 REQUIRE 'RTLIN:LIBPROLOG';      ! LIB$ definitions
;    63          0132  1
;    64          0133  1 !
;    65          0134  1 ! TABLE OF CONTENTS:
;    66          0135  1 !
;    67          0136  1
;    68          0137  1 FORWARD ROUTINE
;    69          0138  1         LIB$CRC_TABLE:NOVALUE;  ! CRC table build routine
;    70          0139  1
;    71          0140  1 !
;    72          0141  1 ! MACROS:
;    73          0142  1 !
;    74          0143  1 !       NONE
;    75          0144  1 !
;    76          0145  1 ! EQUATED SYMBOLS:
;    77          0146  1 !
;    78          0147  1 !       NONE
;    79          0148  1 !
;    80          0149  1 ! OWN STORAGE:
;    81          0150  1 !
;    82          0151  1 !       NONE
;    83          0152  1 !
;    84          0153  1 ! EXTERNAL REFERENCES:
;    85          0154  1 !
;    86          0155  1 !       NONE
```

```
;    88          0156  1 GLOBAL ROUTINE LIB$CRC_TABLE  ( ! Build a table for the CRC routine
;    89          0157  1     POLY,                      ! Adr of CRC polynomial input
;    90          0158  1     TABLE)                     ! Adr of where table is to be built
;    91          0159  1         :NOVALUE =             ! No value is returned
;    92          0160  1 !++
;    93          0161  1 ! FUNCTIONAL DESCRIPTION:
;    94          0162  1 !
;    95          0163  1 ! The input polynomial is used to produce a table with 16 longword entries
;    96          0164  1 ! which is the proper format to be used by the LIB$CRC routine for
;    97          0165  1 ! calculating the CRC for a data stream.
;    98          0166  1 !
;    99          0167  1 ! FORMAL PARAMETERS:
;   100          0168  1 !
;   101          0169  1 !       poly.rl.r               input CRC polynomial
;   102          0170  1 !       table.wl.ar             Adr of where table of 16 longwords
;   103          0171  1 !
;   104          0172  1 ! IMPLICIT INPUTS:
;   105          0173  1 !
;   106          0174  1 !       NONE
;   107          0175  1 !
;   108          0176  1 ! IMPLICIT OUTPUTS:
;   109          0177  1 !
;   110          0178  1 !       NONE
;   111          0179  1 !
;   112          0180  1 ! ROUTINE VALUE:
;   113          0181  1 ! COMPLETION CODES:
;   114          0182  1 !
;   115          0183  1 !       NONE
;   116          0184  1 !
;   117          0185  1 ! SIDE EFFECTS:
;   118          0186  1 !
;   119          0187  1 !       NONE
;   120          0188  1 !
;   121          0189  1 !--
;   122          0190  1
;   123          0191  2     BEGIN
;   124          0192  2     MAP
;   125          0193  2         TABLE: REF VECTOR [16],
;   126          0194  2         POLY: REF VECTOR [1];
;   127          0195  2     LOCAL
;   128          0196  2         TMP,                    ! temporary
;   129          0197  2         X,                      ! used as a flag
;   130          0198  2         INDEX,                  ! index into the CRC table
;   131          0199  2         I;                      ! iteration index for making each entry
;   132          0200  2     INCR INDEX FROM 0 TO 15 DO
;   133          0201  3         BEGIN
;   134          0202  3         TMP = .INDEX;
;   135          0203  3         INCR I FROM 1 TO 4 DO
;   136          0204  4             BEGIN
;   137          0205  4             X = .TMP AND 1;
;   138          0206  4             TMP = .TMP<1,31>;   ! Equivalent to .TMP ^ -1
;   139          0207  4             IF .X EQL 1 THEN
;   140          0208  4                 TMP = .TMP XOR .POLY[0]
;   141          0209  3             END;
;   142          0210  3         TABLE[.INDEX] = .TMP
;   143          0211  2         END;
;   144          0212  2     RETURN;
```

```
;  145          0213  1     END;

                                                        .TITLE  LIB$CRC_TABLE Library CRC table genarator
                                                        .IDENT  \1-003\


                                                        .PSECT  _LIB$CODE,NOWRT,  SHR,  PIC,2

                                          000C 00000    .ENTRY  LIB$CRC_TABLE, Save R2,R3                       ; 0156
                                     50   D4 00002    CLRL    INDEX                                           ; 0210
                          52         50   D0 00004 1$: MOVL    INDEX, TMP                                      ; 0202
                          51         01   D0 00007    MOVL    #1, I                                           ; 0203
          53         52   01         00   EF 0000A 2$: EXTZV   #0, #1, TMP, X                                 ; 0205
          52         52   1F         01   EF 0000F    EXTZV   #1, #31, TMP, TMP                               ; 0206
                          01         53   D1 00014    CMPL    X, #1                                           ; 0207
                                     04   12 00017    BNEQ    3$                                              ;
                          52    04   BC   CC 00019    XORL2   @POLY, TMP                                      ; 0208
                    E9    51         04   F3 0001D 3$: AOBLEQ  #4, I, 2$                                      ; 0207
                08 BC40   52         52   D0 00021    MOVL    TMP, @TABLE[INDEX]                              ; 0210
                    DA    50         0F   F3 00026    AOBLEQ  #15, INDEX, 1$                                  ;
                                     04   0002A    RET                                                     ; 0213

; Routine Size:  43 bytes,    Routine Base:  _LIB$CODE + 0000

;  146          0214  1     END
;  147          0215  0     ELUDOM



;                                   PSECT SUMMARY

;       Name                    Bytes                           Attributes

;  _LIB$CODE                      43  NOVEC,NOWRT,  RD ,  EXE,  SHR,  LCL,  REL,  CON,  PIC,ALIGN(2)


;                                 Library Statistics

;                                          --------  Symbols  --------      Pages       Processing
;       File                               Total     Loaded   Percent       Mapped      Time

;  _$255$DUA28:[SYSLIB]STARLET.L32;1         9776          0         0          581       00:00.7
;  _$255$DUA28:[LIBRTL.OBJ]RTLLIB.L32;1        36          0         0            8       00:00.1
```

```
;                                       COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS$:LIBCRCTAB/OBJ=OBJ$:LIBCRCTAB MSRC$:LIBCRCTAB/UPDATE=(ENH$:LIBCRCTAB
;       )

; Size:         43 code + 0 data bytes
; Run Time:       00:02.3
; Elapsed Time:   00:14.0
; Lines/CPU Min:   5733
; Lexemes/CPU-Min: 10000
; Memory Used:  40 pages
; Compilation Complete
```

LIBCUTDX
LIS

LIBCUTMAC
LIS

LIBCRCTAB
LIS

LIBCUTDF
LIS

LIBCUSTOM
LIS

LIBCREDIR
LIS

LIBDATAB
LIS

LIBCOMMON
LIS

LIBCRC
LIS